PBW

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(PBW Project No. 1352)

VIA OVERNIGHT DELIVERY

Mr. M. Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-AP)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Proposed Lot 19/20 Soil Sample Analytes, Gulfco Marine Maintenance Site, Freeport, Texas

Dear Mr. Miller:

Consistent with the requirements of Section 5.6.3 of the approved Remedial Investigation/ Feasibility Study (RI/FS) Work Plan for the subject site (the Site), please find enclosed the proposed analyte list for surface soil samples from Lots 19 and 20, located immediately west of the Site. This information is provided by Pastor, Behling & Wheeler, LLC (PBW) on behalf of LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow). In accordance with Paragraph 52 of the modified Unilateral Administrative Order for the Site, I certify that I have been fully authorized by the Respondents to submit these documents and to legally bind all Respondents thereto.

Section 5.6.3 of the RI/FS Work Plan (the Work Plan) provides for the collection of surface soil samples (0 to 1-inch depth interval) from 27 random locations within a 100-foot sample block grid on off-site Lots 19 and 20. These samples were collected on April 10, 2007 from the locations shown on the attached Figure 1.

In accordance with the Work Plan provisions, the analyte list for the Lots 19 and 20 surface soil samples was developed through a two step process. The first step was a comparison of the maximum concentration of each metal in the surface soil samples from on-site Lots 21, 22 and 23 to the Preliminary Screening Values (PSVs) in Table 17 of the RI/FS workplan. The step second was a comparison of the Lots 21-23 data to site-specific background data.

PSV COMPARISON

The PSV comparison is provided in the attached Table 1, which lists the maximum metal concentrations reported in the surface soil samples from Lots 21-23, along with the corresponding Table 17 PSVs for those metals. The Lots 21-23 data (Appendix B to this letter) include metals concentrations from soil boring (SB) locations (0 to 0.5 inch depth interval) and surface sample (SS) locations (0 to 1 inch depth interval). It should be noted that the PSV listed for iron in Table 1 (53,000 mg/kg) represents a revised PSV calculated from an updated National Center for

Environmental Assessment (NCEA) iron reference dose of 0.7 mg/kg-day (revised in September of 2006). Use of this revised reference dose and the resulting iron PSV of 53,000 mg/kg was previously approved by you in an e-mail on February 1, 2007. As shown on Table 1, the maximum arsenic, lead and mercury concentrations in the Lots 21-23 samples exceeded their respective Table 17 PSVs.

The far right column in Table 1 lists, for each parameter, the lowest of the Table 17 PSVs associated with direct contact exposure pathways (i.e., those pathways involving soil contact by residential receptors). The PSVs for these pathways include EPA Region 6 human health media-specific screening levels for soil, TCEQ $^{Tot}Soil_{Comb}$ Protective Concentration Levels (PCLs) (includes inhalation, ingestion and dermal pathways), and TCEQ $^{Air}Soil_{Inh\text{-}V}$ PCLs (inhalation pathway). For all metals except lead, mercury and strontium, the Table 17 PSV is equivalent to the lowest direct contact PSV. For lead and mercury, the Table 17 PSV is the TCEQ $^{GW}Soil_{Class3}$ PCL, which is based on protection of groundwater. Given the absence of these two metals in groundwater above screening values (see data provided in my January 19, 2007 letter to you), and the objective of the Lots 19-20 investigation to evaluate potential direct contact residential surface soil exposures, it is proposed that the lowest direct contact PSV is the appropriate screening criterion for evaluating these two metals as potential analytes. For mercury, the maximum concentration in the Lots 21-23 samples (0.66 mg/kg) is less than lowest direct contact PSV (2.1 mg/kg), and thus, consistent with my discussion with you on April 9, 2007, mercury was not retained on the Lots 19-20 analyte list. The maximum lead concentration (643 mg/kg) exceeds the lowest direct contact PSV (400 mg/kg), and thus lead was retained on the proposed Lot 19-20 analyte list.

BACKGROUND COMPARISON

Following the PSV comparison, the Lots 21-23 surface soil data for arsenic and lead were compared to site-specific background data from ten surface soil concentrations collected from within the approved background area approximately 2,000 feet east of the Site near the east end of Marlin Avenue. The background sample locations are shown on Figure 2. The background arsenic and lead data are provided in Appendix C.

The background evaluation was performed using the same approach previously used for Intracoastal Waterway sediment data when developing the fish tissue analyte list. This methodology is described in Chapter 5 of EPA's *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites* (EPA, 2002). Consistent with this methodology, summary statistics were calculated and distribution testing was conducted on the Lots 21-23 surface soil and background soil data sets for arsenic and lead. The results of these calculations, performed using EPA's *PRO UCL* statistical software package (EPA, 2004), are provided in Appendix D.

EPA Guidance (EPA, 2002) recommends Student's Two-Sample t-Test, which tests for the difference in means between two populations, for comparisons to background; however, it notes that this test is not recommended when comparing populations with unequal variances. Inspection of the summary statistics in Appendix D shows that the variances for arsenic and lead were not similar for the Lots 21-23 surface soil and background soil data sets. In such cases, EPA 2002 refers the user to EPA's *Guidance for Data Quality Assessment Practical Methods for Data Analysis* (EPA, 2000), which recommends use of Satterthwaite's Two-Sample t-Test when comparing data sets with unequal variances. In accordance with this guidance, Satterthwaite's Two-Sample t-Test was used to determine whether the Lots 21-23 and background data sets were

statistically different. Appendix E provides the calculations, described in EPA, 2000, that determine statistical difference using this test. As detailed therein, the Lots 21-23 surface soil data and the background soil data for arsenic were found to be statistically similar, while the Lots 21-23 surface soil data and the background soil data for lead were found to be statistically different.

Thus the comparison of the Lots 21-23 data to the background data indicates that lead is above background, while arsenic is within the range of background. Based on the PSV comparison described above and this background evaluation, it is proposed that the Lots 19 and 20 surface soil samples collected in April be analyzed for lead in accordance with the methods and procedures specified in the Work Plan, the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP).

Thank you for the opportunity to submit this information. We look forward to your approval of these proposed activities, so we can continue to move forward with the expeditious completion of the RI/FS.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric F. Pastor, P.E.
Principal Engineer

cc: Ms. Luda Voskov - Texas Commission on Environmental Quality
Mr. Robert L. Iuliucci - Sequa Corporation
Mr. Brent Murray – Environmental Quality, Inc.
Mr. Rob Rouse - The Dow Chemical Company
Mr. Donnie Belote – The Dow Chemical Company
Mr. Allen Daniels - LDL Coastal Limited, LP
Mr. F. William Mahley - Strasburger & Price, LLP
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Ms. Elizabeth Webb - Thompson & Knight, LLP